



RAPTOR RESEARCH NEWS

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Late Issue of News. I owe our readers an apology for the delay in this issue. After an original delay planned to report the Carbondale meeting there have been a series of other unforeseen events. This issue is now complete and will be mailed in early November. In the meantime, however, we have most of the material assembled for the remaining two issues; these should thus be in the mail at approximately two or three week intervals. B.E.H.

Committee Structure. Considerable thought has been given to this topic. Those who were at our May meeting had an opportunity to consider and comment on the possible roles of the committees. As many as possible of these suggestions have been repeated in the meeting report in this issue. We hope all of our members will read this over and send in their ideas to pass on to the committee chairmen.

Breeding Committee Registry Project. We are happy to report that the International Council for Bird Preservation, United States Section, Inc., has approved an application of Don Hunter's for the Foundation for a small grant to be used in developing a registry of birds in captivity related to the breeding projects. We feel that this will be an important aid in this work. A request for suggestions was sent out in B.P.I.E. No. 7 and is extensively quoted in the summary of that issue on the following page. We hope our readers will read this and make their suggestions.

A New Bibliography. The first part of "An Extensive Bibliography on Falconry, Eagles, Hawks, Falcons and other Diurnal Birds of Prey; Part I: Falconry and Eagles" by Richard R. Olendorff has just been published by the author. We have included a prospectus of this publication with this issue of the News. We believe this will be of considerable value to many of our readers and hope to have a review soon.

BREEDING PROJECT INFORMATION EXCHANGE

Number 5 of the B.P.I.E. was issued on March 26, 1968, and Numbers 6, 7, and 8 were sent out on July 26. To maintain the informality of the exchange each number is now headed with a statement "This is not a publication."

In No. 5 Fran Hamerstrom reported on the method of artificial insemination used with her Golden Eagle in Wisconsin. She describes the equipment and technique in some detail. She also comments on sexing raptors by examination of the prolapsed oviduct, a technique that should be of value to banders and others.

Joe Simonyi reports in No. 6 on work with Peregrines and Red-tailed Hawks at Hornby, Ontario, Canada. He gave some general suggestions on the care of the birds including the use of live quarry and the use of a dark room in the day and light at night so he can work more with them in the evening. His Peregrine laid one egg May 19, 1967, which she incubated; it was infertile and removed June 11, but the bird did not recycle. He has been able to manipulate light and change time of molt in his Red-tails. The female in winter had been exposed to increased light. A male from an outdoor aviary was added in mid-January, and both birds were nest building in February. He attempted to stop the cycle by exposing them to natural (10 hour) light. Although the room was very cold eggs were laid on February 25 and 27 which were being incubated when the report was submitted.

Don Hunter commented on the proposed registry in No. 7. He discussed possible methods of marking the birds and developing a recording system of card questionnaires. We want as many suggestions as possible, and will therefore quote this section completely.

"We are also developing a questionnaire type report card whereupon standardized information, as well as, unique information may be systematically recorded. In addition to obvious information such as species, age, quarters, diet, etc., we have listed the following information as possibly important: Eyess or wild caught adult or sub adult? (Haggard or passage.) Handling of bird; manned or not manned; flown or not flown? Lighting, both natural and artificial? Temperature in quarters; daily fluctuation; mean? Date birds placed together? Which one first in quarters and for how long in advance? Behavior of both sexes? Coincidence of molt with egg production and/or light period changes either natural or artificial? Diet? Eggs? Fertile or infertile? Dates of laying? Dates of hatching? Natural or artificial incubation? Temperature of incubation? Analysis of cause of infertile eggs? Dead embryos? Chemical analysis? Status of young? Fed by hand or by parents? Diet? Present status? Registry number of young?"

In No. 8 Richard D. Porter and Stanley N. Wiemeyer of Patuxent Wildlife Research Refuge, Laurel, Maryland, report on extensive work on American Sparrow Hawks from which 131 young were produced by 43 pairs in 1967. They made observations on the effect of the size of pens (if too small, unsuccessful), isolation (adjoining pens better), wild trapped vs. nestling (none), manning (unnecessary), pairing (not difficult), disturbance (must be minimal), and food (no cannibalism with finely ground rodent and chicken parts). We look forward to seeing the full published report on this work.

NOTES ON RAPTOR OBSERVATIONS AND BANDING DURING 1967

by George Jonkel and Don Adolphson

During the nesting season of 1967 we banded 39 young raptors from nests in South Dakota. In connection with banding operations, data was collected on 84 raptor nests to provide information for the statewide population study that we are conducting for the Raptor Research Foundation, Inc. In many of the nests, young were not banded; however, nest success and other information was gathered so that we will be able better to determine the status of these species. The following includes only our banding data but includes nest success data from John Flavin.

The first Red-tailed Hawks were noticed on March 10 with 17 observed during March, 13 during April and 12 during May. They are numerous in the Black Hills and timbered valleys of the larger streams of the prairie. They are the most common hawk nesting west of the Missouri River in South Dakota. They fledged over two young per nest for 24 nests. The nests were all high in trees and difficult to get to and only one young was banded. Except for occasional wintering birds, the marsh hawks moved back about March 10 with 13 seen in March, 48 in April and 18 in May. They are common in some areas but rare in others. During the summer Don Adolphson saw approximately one per 50 miles of travel. No nests were located by us.

Sparrow Hawks were very plentiful during migration and the nesting period in the West River area, with 7 seen in March, 70 in April and 86 in May. Every timbered area along the creek bottoms in the West River prairie seemed to have a pair.

Swainson's Hawks seem to be plentiful on the prairie, statewide, with the first ones back about April 15 and 30 seen during April and May. We made observations on 23 nests. By fledging time 12 of these appeared to have been blown down or abandoned and were unsuccessful. Eleven of the 23 were successful and fledged at least 19 young. Four of the nests had one young, four had two young, one had three young and one had four young. On one of the nests the young fledged but were not counted before flying. Six of these nests were occupied by Swainson's during 1966. In "Life Histories of North American Birds of Prey," Bent reports that for about every 30 Swainson's nests, one has four young. The Swainson's nests were all in trees but most were fairly easy to get to. A magnesium extension ladder was used to avoid human scent on the trees and to prevent predators trailing the scent to the nests. The nests were not visited until the young were about to fly because Swainson's are reported to be likely to abandon nests if disturbed during incubation. Observations were made from a distance during incubation.

We had observations on five Ferruginous Hawk nests, all of which are believed to have fledged young. Two of the nests are known to have raised three young each, four of the nests were in trees and one was on the ground. One of these nests was used by Ferruginous Hawks during 1966. The ground nest was also very near a ground nest used in 1965.

John Flavin had 18 Ferruginous nests located in the West River area during 1967. Of these only seven produced young. The low success was due to the severe April 30-May 1st blizzard. In 1966 he had 16 nests, 13 of which produced young. Three of the pairs produced young on the same nest both years.

B. J. Rose reported seeing a Harlan's Hawk in Pennington County in April and one in Haakon County during spring migration.

Due to the very wet summer we did not get to all the Golden Eagle nest sites in time to band, but 20 nest sites were located. We do know that young were fledged in four counties.

Great Horned Owl nest success was better in 1967 than in 1966. Of the 14 known nests, all were believed successful. Two of the nests were inaccessible. Of the 12 nests where young were banded, three raised three young, six raised two young and three raised one young. This gives a nest success of two young per nest compared to 1.75 young per nest for 13 nests in 1966. Seven of the 1967 nests contained food items consisting of one kangaroo rat, six cottontail rabbits, two jackrabbits, two blue-wing teal, one snake, four meadow mice and one white-footed mouse.

THIRD MEETING OF THE RAPTOR RESEARCH FOUNDATION

Report by Byron E. Harrell

The third meeting of the Foundation was held at the time of the Wilson Ornithological Society at the Southern Illinois University, Carbondale, Illinois. In order to avoid conflicts the Foundation met at breakfast, lunch, and late afternoon sessions on Saturday, May 4, devoted to certain areas and again in a morning session on a wide variety of topics Sunday, May 5. We wish to thank the Wilson Ornithological Society and Southern Illinois University for their aid and cooperation. We are especially indebted to Dr. Eugene LeFebvre for making the arrangements in Carbondale.

Since all of the interests of the Foundation are subdivided into the developing committee structure, the discussion sessions were divided accordingly. The Saturday morning breakfast meeting on banding was very successful, but the noon lunch meeting proved too difficult a site for a general discussion so the breeding discussion was postponed. The afternoon session was combined with a social hour and populations and ecology were discussed. A number of people met informally at breakfast, followed by the general meeting where these topics were reviewed and the remaining topics discussed. In addition to these there were a number of informal meetings of members. The following members and friends are recorded attending one or more of the sessions:

Dean Amadon (N.Y.)	Herbert Koepp-Baker (Ill.)
Earl B. Baysinger (Md.)	Eugene LeFebvre (Ill.)
Eric J. Bienvenu (La.)	Tony Luscomb (Iowa)
Dick Brownstein (N.Y.)	Mahlon K. Mahoney (Ill.)
John Bull (N.Y.)	John C. Ogden (Fla.)
Richard Fyfe (Alta.)	Sergej Postupalsky (Mich.)
William George (Ill.)	Gerald L. Richards (Wisc.)
James W. Grier (Wisc.)	Gary D. Schnell (Kans.)
Frances Hamerstrom (Wisc.)	George M. Sutton (Okla.)
Frederick Hamerstrom (Wisc.)	John L. Tatschl (Kans.)
Byron E. Harrell (S.D.)	James D. Weaver (Ill.)
Ronnie J. Haynes (Ark.)	Stanley N. Wiemeyer (Md.)
Donald V. Hunter, Jr. (S.D.)	

In planning the committee organization, there was an attempt to find a place for each interest in raptors. We have tried to make a logical organization but have grouped some areas together. Fyfe inquired about the possibility of having a Canadian on each committee; since we have numerous Canadian members, this should be possible.

Some discussion was held on meetings of the foundation. Since our organization is very diversified in interest and in geography, it seems advantageous to meet with other related organizations in different places. The current meeting with the Wilson Ornithological Society permitted attendance of some who might otherwise have been absent. Many members thought the meeting so stimulating that hopefully similar discussions could be held elsewhere.

In the following report I have listed and numbered the committees as reported in the recent brochure. The short explanations from the brochure are quoted.

1. Editorial Committee. "Editing of Raptor Research News or any other publications." At present this committee consists of Byron Harrell and Don Hunter. There was some discussion of the pros and cons of having a more formal journal. There was no special feeling expressed to change the format at this time. A change to a more formal journal would be a very large step, and since the News in its present somewhat "semi-formal" nature seems to be fulfilling a special worthwhile function, no change is anticipated at present.

The Board of Directors has authorized the publication of a lengthy manuscript by Richard R. Olendorff entitled, "Falconiform reproduction: a review; Part 1: The pre-nestling period." This reviews a great deal of scattered literature and should be useful to those of our members who do not have access to research libraries, and would be of enormous value to those involved in breeding projects for its observations as well as ideas expressed. The many field observations reviewed should stimulate the reader who has or will have other related observations to report them. It is planned to publish this paper as some sort of special publication by offset and be paper bound; the income resulting from its sale at a moderate price can be used to replenish a special publications fund. Considerable thought has been applied to the name of a series of which this paper will be No. 1 so that the series title will not need to be changed or confuse librarians. (Editors' note: this publication is planned to be issued by the end of the year.)

Some discussion was held also on a bibliography of 4 or 5,000 references also by Mr. Olendorff. Publication independent of the Raptor Research Foundation is anticipated. (Editors' note: the first part of this bibliography has since been published and is noted elsewhere in this issue of the News.)

2. Captivity Breeding Committee. "Will coordinate breeding projects of cooperators and issue the B.P.I.E. (Breeding Project Information Exchange), aimed at eventual development of successful

breeding techniques." Don Hunter has agreed to be Chairman on a pro-tem. basis since he has been one of those involved for a long period. Since he is also Co-editor of the News and Treasurer, we anticipate finding a permanent chairman later. Cooperators on the breeding projects have been in effect committee members; formal appointments will be made in the future.

The B.P.I.E. is an important activity of the committee. Cooperators send in their thoughts or ideas or reports or plans; these are duplicated and sent to the cooperators and a few others, about 30 altogether. There has been indication that this opportunity to keep in touch is appreciated. However, we have not yet heard from some of the cooperators; probably some special invitation will be needed.

The committee has also been interested in the problem of records. Some birds have been transferred from one project to another. A history of the individual bird would be very valuable. Thus a registry is being planned. It has been felt some central file on each bird in the projects should be kept. Perhaps some ideas or records can be adapted from kennel club systems. If the breeding attempts are successful such information will be important for genetic analyses.

Hunter commented on what the Foundation through the committee wishes to do and why they are trying to develop techniques of captivity breeding. The committee feels that the two principal reasons are to play a possible role in the preservation of certain species and to have a useful tool for ethological, physiological, and other studies. The efforts now are to coordinate the diverse individuals or groups of individuals and their facilities rather than develop a large concentrated effort with numerous birds at one facility. This latter choice would also require large amounts of funds not presently available, but may be desirable in the future to solve specific problems with particular species. At this time there is a crash effort on Peregrines because of their particularly difficult situation, but a number of other cooperators are also using other raptors in less immediate danger or more available (and also in some ways easier to handle). The News has reported some successes and some failures, but the committee feels that much more is now known of the problems involved. Since the projects first started, some problems have been seen to be minor, and some not anticipated have developed. The committee can function to combine the special knowledge of the cooperators. Hunter also commented that contrary to some people's ideas it is not a function of the Foundation to encourage persons to enter in these projects and remove more birds from the wild, but primarily to coordinate the activities of those who have facilities and birds already in captivity. New birds from the wild for old or new cooperators are thoroughly considered before proceeding.

There were a number of questions from the discussion participants. In response to a question on the number of Peregrines in captivity associated with the Foundation, Hunter and Fyfe indicated that there are about 12 pairs. The number is small because of the limits of cooperator's facilities. A number of these were in the hands of falconers before the projects were begun. Fyfe was asked whether the Canadian Wildlife Service will work along these lines. A proposal he made two years ago has not been activated, but what he has been doing on his own has not been discouraged. Since he is the only one assigned to work on birds of prey, the Service is reluctant to have him devote all of his time to this type of work. However, he felt that they would be cooperative with other efforts.

Further comments were made by Grier on the breadth of the goals of the breeding projects. Many persons and some of the cooperators are primarily interested in the technique for a sustaining source of birds for use in falconry. However, there are also the aim of preservation of populations which might become extinct and the aim of aiding pure biological studies. Harrell commented there could be a real possibility of reintroduction into areas where a species had been exterminated if finances and reduced pesticide levels permit. In the meantime the birds in the project could possibly be used for other biological studies compatible with breeding. Since there is considerable investment of time and money just to keep a young bird until it is old enough to breed, compatible studies could be conducted during this time. The Foundation is very concerned that any project associated with them be certain to be maintained a long enough time to justify its existence. We obviously have no control over projects which are started without any arrangement with us.

3. Raptor Population Committee. "Will coordinate activities and data of cooperators in various areas to assess changes in raptor populations." George Jonkel, Foundation Secretary, is the Chairman. Since this committee will have the most widespread participation of members, this committee has a large organizational task.

There was considerable discussion of approaches to the general problem. Hunter mentioned the work in South Dakota involving birds seen, nests found, and their success each year. Some of the data on Red-tails and Prairie Falcons is best. There was a general feeling that there should be sample areas which can be revisited regularly as well as monitoring the populations over a widespread area, the extensiveness depending on manpower. Fyfe stressed working on species in danger if the program must be limited. We can't always be sure which are in danger, but generally we might worry about bird eaters. Fyfe described the Canadian Wildlife Service work. They will concentrate on the

river systems of the southern Prairie Provinces and have sample areas of 100 square miles to the north for Bald Eagle, Osprey, and Peregrines. Fran Hamerstrom stressed the repeated work on study areas. Postupalsky and Grier also contributed to the discussion.

Fyfe mentioned the nest record card schemes (in Canada and at the Cornell Laboratory of Ornithology) to which he thought we could contribute especially if we got a good number out on population surveys. He expressed some concern over the availability of specific materials such as exact eyrie localities; the Cornell Lab has indicated that the cooperator can report only the state or province if he wishes. The committee might consider being a collecting center on raptor data. Xerox copies of material on file are available; possibly a duplicate set on raptors would be of value. At any rate our cooperators on population studies would be in a good position to help. Mr. Bull commented on the use of nest record cards on the distribution of birds of New York state, and the problem of rarer species such as Goshawk and Golden Eagles, but he felt it would do no harm to show the exact locations of extinct sites of Peregrines.

The restriction of information brought up the matter that the Foundation should develop some sort of archive for filing details where only a digested form is published and for diaries or field notes of persons no longer active but who wish their materials preserved. It is also essential to have procedures that will be satisfactory to the worker so that he cooperates with the committee. The procedures will have to protect the information from illegitimate use but still not create particular difficulties when it is needed; we need just the right amount of red tape. It might be well to investigate the procedures of the vertebrate paleontologists who found that published type localities were being ruined by unqualified collectors; they now publish less precise data and file details in a depository where it is available to legitimate workers.

There was some talk of how the committee might develop organizationally. First, develop a certain standardized approach to provide validity to the monitoring of species populations, and second, develop methods applicable to certain species such as uncommon forest hawks where enormous labor might be required with ordinary methods. Students of particular species might provide ideas on this. The matter of the potential value of an information exchange (such as B.P.I.E.) was discussed and considered worthwhile.

The committee has obvious relationship to the Ecology Committee. In planning the committee structure of the Foundation, it was felt that there should be certain persons placed on more than

one committee who would serve as a liaison to keep each committee appraised of the pertinent activities in the other committee. Fyfe also thought some members of the Population Committee might function as liaison with amateurs to encourage the collection of specific information and explain why it is of value.

4. Raptor Banding Committee. "To coordinate activities of raptor banders, aid in solution of problems of cooperators, and maintain a liaison with the banding office." Frances Hamerstrom is chairman of this committee. At our Saturday morning meeting we had the pleasure of having Mr. Earl Baysinger, head of the U. S. Fish and Wildlife Service Bird Banding Laboratory, join our discussions. He and our chairman have already corresponded on developing cooperation. The official Bird Banding Manual is currently being revised, hopefully to be complete by mid-1969. Fran is preparing a short section on raptor banding. She is very interested in getting workable and tested techniques of traps, handling, banding, etc., for inclusion in this section.

There was some discussion of data from nestling bandings. Although the full locality is on the schedule, the tape and print out only include the 10 minute quadrangle; the schedules never leave the banding office and they are conservative in allowing access. In addition they restrict the material of extensive projects to others for five years unless the investigator gives permission. The matter of Foundation archives of restricted information was discussed and is reported in more detail elsewhere.

Some discussion was held about the possibility of the Foundation publishing its own manual which would be much more extensive than the section in the official manual. Of special interest would be procedures which protect the birds or their nests. The Rockford group have developed a number of nest protection techniques. Many of these are simple enough if known and if used a lot of trouble can be avoided. Such a specialized manual could have advantages over the official one: since it would all be pertinent to the raptor bander it would more likely be read; it would have shorter (and more accurate) band size listings; it could be made small enough to fit in a field kit. On the subject of nest protection interest was shown in a technique of nest examination reported by Harrell as developed by his student Tom Dunstan. It is based on the use of an inexpensive Polaroid Swinger camera mounted on a pole. The 2'-infinity focus, built in flash when needed, and light weight make it more versatile than a mirror on a pole used by some. The apparatus saves time, reduces disturbance and allows examination of unclimbable nests.

5. Bio-Telemetry Committee. "To exchange information of investigators using this technique." A number of our members are interested. Since it is such a highly specialized technique

related to several different areas of work a separate committee seemed appropriate. Because of limited time no discussion was held at the meeting.

6. Raptor Pathology Committee. "To assemble information on diseases and injuries and their treatment in raptors." Some of our members are parasitologists and veterinarians so we hope to have a well qualified committee. Harrell suggested that the committee might consider the development of a small manual on the treatment of injuries and diseases of raptors. This would be of considerable importance to the breeding projects, but also to others to whom injured or sick hawks are sometimes brought. The ordinary veterinarian is usually unqualified in this area, but if his skills are useful this manual could prevent some drastic mistakes. Such a manual could also be provided to zoos, at most of which such specialized information is lacking. In the breeding program where all birds are so valuable, the loss of one bird may often mean the loss of the use in the project of the other member as well. Such a manual may avoid preventable losses. It was also mentioned that in such serious events long distance phone calls for help would be valuable investments.

7. Pesticide Committee. "Monitor information on the level of pesticides in raptors and investigate effects of such poisoning." The discussion began with a statement by Dr. Sutton relating a dramatic incident of pesticide poisoning. In this case in Oklahoma a farmer had doubled the recommended dosage of parathion and applied it to a wheat crop which subsequently was grazed by a flock of Snow and Blue Geese which promptly and painfully died. Sutton was struck by the enormous destruction potentially possible. Dramatic as this case is the insidious nature of even low doses of more persistent pesticides is even more important. Since the birds of prey are undoubtedly in danger to a present and potential pesticide environment, this is one of the most important of our committees.

Further comments were made on the commercial influences pushing DDT and other persistent pesticides. Although there are increasing restriction on DDT use (for example on dairy cattle feed grains) and substitution of less persistent pesticides such as seven, production of DDT apparently has not decreased, much of it going abroad now especially to "help" developing countries in Africa. With the spread of Dutch Elm Disease, DDT is still being promoted because of less cost than non-persistent substitutes. The rationalizations used by the manufacturers were illustrated by an experience of Hunter's who heard an agricultural college "expert" explain a survey of pesticide users which reported that 85% of the farmers who used them on crops thought the pesticides were detrimental to wildlife, but only 5% of the urban dwellers who used them on gardens and shrubs thought so. The "expert" explained that the education level of the farmers was less than

that of the city dwellers so they did not understand the problem as well!!! The problem of developing a rational use of pesticides is still a long ways off and of an immensity that our group will not solve by itself.

There are two aspects of interest to this committee: monitoring wild raptors by biopsy and investigation of physiological and behavioral effects. After reviewing the work being done the committee might encourage work on certain aspects. Fyfe indicated that this was the area of his assignment in Canada with an emphasis on monitoring all species of birds of prey. He thought the committee would be valuable if it also involved the non-government people who are close to this problem; also others not directly involved could contribute through collections of materials for analysis and contribute money since analyses are expensive.

In addition to biopsies from wild populations, samples from breeding project birds, especially wild caught ones, would seem to be called for. The use of a bird with a large pesticide load might endanger the project. The experimental work is also important for it is difficult to prove death (or disappearance) by pesticides so both approaches require considerably more information.

Mr. Wiemeyer spoke on the work at Patuxent. They are getting some answers on the proof of death problem determining the level in brain of different pesticides that cause death. They are not yet into the monitoring area but hope to work into this to determine baseline information. Harrell emphasized that more knowledge was needed on levels which knock out reproduction. Fran Hamerstrom made a plea that brain levels be correlated with muscle sample levels since brain samples are unavailable for biopsy. When queried on the preference of muscle for fat, she indicated the absence of fat in some raptors, especially males, and the work of Prestt who indicated that when fat is utilized pesticides are concentrated resulting in a great variability in sampling. Fyfe supported this idea and reported that there is a possibility of using feathers as is now done in mercury analyses. Further he indicated that Patuxent and the Canadian Wildlife Service were working in cooperation, field work being stressed in Canada and laboratory experiment on Sparrow Hawks and Coturnix Quail stressed at Patuxent. He is also quite interested in sublethal effects especially in Peregrines and Prairie Falcons; he cited high levels as a possible cause of desertion in a Prairie eyrie. Wiemeyer thought that if they had another successful season they should have some data on Sparrow Hawk reproduction and pesticide levels, as well as egg shell thickness to provide guidelines for evaluation of field data. Hunter indicated that some game people are working on behavior changes associated with pesticide levels.

Fyfe emphasized the value of coordinating government and private research. He also mentioned a possibility of using raptors to monitor or be an index to pesticides in the environment in general. This could give raptors special importance to the public and agriculture. He has noted an encouraging trend of interest in the problem of residual effects in the field of agriculture especially in the dairy industry but increasingly in other areas.

8. Raptor Ecology and Ethology Committee. The committee is obviously closely related to the Raptor Population Committee, but the work is usually more intensive and less extensive. Most of the work is in the form of individual studies so there would be less coordinating function. The committee could probably help workers in an advisory or consultative capacity or aid or encourage people who have information or notes to get them out.

9. Raptor Physiology and Anatomy Committee. This committee is an agency for contact for those interested in the fields as such, but also it can have an information providing function for other groups such as the pesticide and breeding project groups.

10. Raptor Taxonomy Committee. This is also a specialized area of work, but this field is also concerned with some problems of interest to others in addition to the basic taxonomic problem such as the use of plumage characters for age determination, so the committee might have relations with other committees as well as perhaps aiding the workers to keep in touch.

11. Education and Conservation Committee. "To collect and distribute information on the preservation of raptors." A number of our members are quite interested in this. The Board of Directors have felt that the Foundation should not be directly involved in such matters as state legislative battles although members as individuals might. They felt that there were other organizations with this function. It could, however, be useful to our members to keep track of this type of activity. The other aspect of the committee is the educational one, such as possibly publishing something useful in schools. The Board felt that this committee would need to develop an approach to these problems. Jim Grier discussed a problem of education relating to differing reactions of urban and rural groups. The difference is reflected in the varying public acceptance of field trials in different states as well as in the reactions of school children. He described vividly an experience in speaking to an urban fifth grade class, reserving some live birds to last. The birds stimulated the students enormously, and in spite of the approach of the talk and slides, the students wanted such birds for pets. He felt there was a major problem of a sociological nature in reaching differing groups. There was some discussion suggesting that some of our experienced members might have some useful suggestions.

The organization will always be too small for the members to reach very much of the population directly, so there was some mention of motion pictures and working through science and curriculum supervisors. We have a considerable amount of talent to draw on.

Fyfe thought that the nature of developing interest of young people can make considerable difference. He cited Canadian examples of a group in Regina whose interests developed in a healthy way, created no problems, and produced a group of serious students of raptors, and the development of interest of a much different sort in British Columbia. He felt that the committee might be interested in these and similar situations to find out the best ways of working with groups and channeling their interests in a productive way.

12. Bibliography Committee. "Recording of published references pertinent to raptor research." This is an area which could perform a valuable service if done right. A good deal of backlog will be listed in the Olendorff bibliography mentioned elsewhere which will be available.

The question of the number of pertinent papers published in a year was raised in an attempt to judge the practicability of publishing an annual list in the News. Grier mentioned that Olendorff published such a list in a falconry journal; this of course only reaches a portion of the interested people. In addition there is a good deal of falconry literature of interest in raptor research that is often unavailable even in good libraries. The possibility of reprinting selected papers might be considered and negotiated.

Special attention was paid to papers in foreign language and small circulation journals. Possibly abstracts should be prepared of these, only listing titles from common sources. A number of our members indicated on the questionnaires that they could read foreign languages. Fyfe indicated that the Canadian Wildlife Service has had translated a work on Gyrfalcons by Dementev and others are possible. Perhaps we could farm out certain journals to people who have access to them so that each issue is checked, and pertinent abstracts prepared. Some older papers now hard to get could perhaps be reprinted or a translation published.

Many of our members are not at universities with research libraries, and even for those that are many sources are still not readily available or are easily missed. The organizational problem might be of reasonable magnitude and certainly would be worthwhile. In addition it would be useful to provide information on where and how Xerox copies of papers might be obtained.

13. Membership Committee. "To contact potential members." We now have about 250 members. The April News will have a membership list. There are a number of people interested in raptor research who have neglected to join. We hope members will look over this list to see whether anyone you think should be a member is missing, and if so invite them to join. Perhaps in a sense the whole membership could be a membership committee. Hopefully we can find a chairman who can spark this effort and follow up leads toward potential members.

14. International Coordination Committee. "Maintain a liaison with raptor workers on other continents." We have been interested in making the Foundation a truly international organization, but the Board of Directors has not had time to pursue this fully. Several prominent workers are being invited to join the Advisory Board, and we are following up on some other contacts, including some obtained from the questionnaire. Grier mentioned that there was active interest in South Africa. If we get a large enough European membership maybe there should be duplicate but coordinate committees or maybe a European section. It is still a little uncertain how this will develop, but we will need committee members willing to write letters to develop these contacts.

15. Finance and Investment Committee. "Work on the financial support of the Foundation." Of all the interest listed in the questionnaire, this is the only one that did not have a volunteer. The present income has allowed us to do what we have tried to do and we can plan expanded activities, but there is little left for investment. The membership system of a \$2.00 minimum covers minimum costs and the voluntary scale has provided over a \$5.00 average. Whether or not we wish to change this to a membership of fixed categories will wait for the future.

MEMBERSHIP LIST--RAPTOR RESEARCH FOUNDATION (to Nov. 1, 1968)

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